Missouri Department of Natural Resources

Summary of results from renewable energy survey

In Spring 2004, the Missouri Department of Natural Resources' Energy Center developed and distributed a survey intended to gather information about renewable energy production and use in Missouri. The survey is ongoing and the Energy Center is attempting to solicit the broadest possible participation in the survey by Missouri citizens or businesses that produce or use renewable energy.

The specific forms of energy covered by the survey include biomass fuels, wind generation, solar photovoltaic (PV) generation and solar water heating. The survey is available on the Web at www.dnr.mo.gov/energy/renewables/re-survey.htm. The scope of the survey is explained in an Instruction Sheet that can be downloaded from this Web site.
Survey participants had the option to request confidentiality for any data that they provided. The following summary takes this into account by including confidential data only in aggregate statistics where it is impossible to identify the individual or company that provided the data.

In addition to posting on the Web, the survey was mailed in Spring 2004 to a large number of Missouri individuals and businesses who were believed to produce or use wind, solar or biomass energy. EC staff followed up these mailings with telephone calls. Many of those who were contacted responded that they do not produce or use renewable energy. However, EC was able to identify about 80 producers of renewable energy in Missouri. The following is a summary of information gathered to date.

- EC identified 43 forest product industry companies, utility plants or institutions that use solid biomass fuels. Most of these used "waste" biomass such as sawdust, scrap wood, walnut hulls, poultry litter or waste paper and turned it into a valuable energy resource. EC estimates current use of this energy resource at about 2.2 trillion Btu per year.

- EC identified 16 landfills, wastewater treatment plants or livestock operations that capture and use methane from biogas as an energy resource. EC estimates current use of this energy resource at about 0.8 trillion Btu per year.

- EC identified a half dozen individuals or institutions that have installed small wind turbines in Missouri. EC estimates that about 65 KW of wind generation capacity is currently installed in Missouri, producing about 142 MWh of electricity per year.

- EC identified a dozen individuals or institutions that have installed small-scale photovoltaic (PV) systems in Missouri. EC estimates that about 100KW of PV generation capacity is currently installed in Missouri, producing about 175 MWh of electricity per year.

- Two established ethanol plants produced about 65 million gallons (5 trillion BTU) of ethanol in 2004. With the introduction of a third ethanol plant at Malta Bend, total state ethanol production should increase by at least another 30 million gallons (about 2.3 trillion BTU) in 2005.

With the exception of the ethanol plants and a few small electric utility projects, the producers listed above are individuals or businesses that use the energy that they produce. They have invested in energy production systems to take advantage of renewable energy resources or waste streams that would otherwise be wasted.

Several utilities also offer their customers the option to purchase "green power." Most of these offerings have been based on electricity from wind farms located in Kansas, although there has also been limited use of opportunity fuels such as walnut shells to generate "green power" in Missouri for distribution through these programs.

Most of the survey results were gathered by phone, but a total of 15 completeed surveys were received by mail. One question on the mail-in survey asked why the respondent chose to use renewable fuel. The respondent could choose more than one reason. Responses to this question were as follows:

- The top reason, chosen by ten respondents, was to save money.
- Ten of twelve forest product firms responding to the survey chose "best way to dispose of a waste product" as a reason for their use of waste wood.
- The count of those selecting the other reasons listed on the survey was as follows:
  - 6 – environmental considerations
  - 4 – quality or reliability of the energy
  - 1 – interest in the technology (chosen by a forest product industry user)
  - 1 – to make electricity available where there are no power lines (chosen by a PV user)

The following respondents to the mail survey agreed to be included in a list of renewable energy users in Missouri:

Huebert Fiberboard
P.O. Box 416
Boonville, Mo 65233
Gerald Huebert – 660-882-2704
Use sawdust (70%) and hardwood chips (30%) purchased from local saw mills to produce steam and heat for cooking wood chips and drying the finished product.

Missouri-Pacific Lumber Co., Inc.
694 DD Highway
Fayette, Mo 65248
Gerald Pescaglia – gawp@mopaclumber.com
Sawdust and shavings are augered into a firebox to operate a low-pressure boiler that provides steam used to dry lumber.

Missouri Wood Products
P.O. Box 250
California, Mo 65018
Larry Bentch - 573-796-4722
Use waste hardwood to fire kilns to dry wood and for seasonal building heat.

Quality Wood Products
7400 East 12th Street
Kansas City, Mo 64126
Ted Clarensau - 816-231-4601
Grind scrap wood and auger it into boiler.

Rowe Furniture/ Himmelberger-Harrison
P.O. Box 108
Morehouse, Mo 63868
Ken Lowes – kenl@rowefurniture.com

Put waste wood through a chip grinder and feed it into a boiler.

Schaller Hardwood Lumber Co.
P.O. Box 1205
Poplar Bluff, Mo 63902
Art Ploetze - 573-785-1003
Use wood sawdust and shavings for steam and kiln drying of lumber.

Smith Flooring Company
P.O. Box 99
Mountain View, Mo 65548
Kent Smith - 417-934-2291
Waste sawdust used for electric generation (500kw) from a steam turbine and to dry lumber.

Winona Post Company, Inc.
P.O. Box 216
Winona, Mo 65588
Kenneth Hiebert - 573-325-4271
Use wood for office heating. The company does not manufacture posts at this time.

Glenn Shira
22151 E. Highway B
Raymondville, MO 65555
660 watt home PV system; not interconnected to grid.

College of Agriculture, Food and Natural Resources
2-28 Agriculture Building
University of Missouri-Columbia
Columbia, MO 65211
Ken Schneeberer – 573-882-8777
Utilize livestock, wood and paper wastes. Also purchase biomass and ethanol for vehicle fuel.

Northwest Missouri State University Maryville
800 University Drive
Maryville, MO 64468
James Teaney (Supervisor, Power Plant) - 660 572 1186
Burn wood chips from demoliton lumber and wood product firms; burn pelletized paper and pelletized livestock waste; wind turbine.

Northwest Missouri State University has pioneered in using a variety of biomass fuels to provide energy to the university campus. Biomass energy in the form of wood chips, pelletized paper and pelletized animal waste now supplies 80 percent of the campus' heating needs. A 10KW wind turbine is also in place and is being tested on behalf of the local electric utilty. A brochure describing biomass energy systems in place at the campus is available – contact Janet Daniel at Jdaniel@mail.nwmissouri.edu. A web page describing use of animal waste is available at http://www.nwmissouri.edu/dept/ag/bioenergy.htm

Questions about the survey should be directed to John Noller at 1-800-361-4827 or john.noller@dnr.mo.gov.